

IN THE CLAIMS:

Please note that all claims currently pending and under consideration in the referenced application are shown below, in clean form, for clarity.

Please amend the claims as follows:

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1. (Twice Amended) A stacked multiple-semiconductor die device, comprising:
a substrate having a surface;
at least one conductive bond area on the surface of the substrate;
a plurality of semiconductor dice having similar dimensions, each semiconductor die having an active surface including at least four edges, and a backside;
a field of conductive bond pads disposed on the active surface of each semiconductor die, the field of conductive pads positioned along less than three edges of the active surface of a semiconductor die, the backside of a first semiconductor die being attached to the surface of the substrate adjacent the at least one conductive bond area of said surface of the substrate and the backside of a second semiconductor die is attached to the active surface of the first semiconductor die in an offset position having the field of conductive bond pads of the first semiconductor die exposed;
conductors connecting bond pads of the first semiconductor die to conductive bond areas of the substrate; and
conductors connecting bond pads of the second semiconductor die to one of the conductive bond areas of the substrate and conductive bond pads of the first semiconductor die.

2. The stacked multiple-semiconductor die device of claim 1, wherein said plurality of semiconductor dice comprise a stack of semiconductor dice having one of substantially the same dimensions and different dimensions.

4. (Previously Amended) The stacked multiple-semiconductor die device of claim 1, wherein said first semiconductor die is attached to said substrate by a thin adhesive layer and said second semiconductor die is attached to said first semiconductor die by a thin adhesive layer.

5. (Previously Amended) The stacked multiple-semiconductor die device of claim 1, wherein each semiconductor die has a field of conductive bond pads along one edge thereof, and the second semiconductor die being offset from the first semiconductor die in one direction to expose the field of conductive bond pads of the first semiconductor die for establishing connections from the bond pads to the substrate.

17. (Previously Amended) The stacked multiple-semiconductor die device of claim 5, wherein each semiconductor die has a length greater than a width whereby rotation of one semiconductor die relative to an underlying adjacent semiconductor die offsets said first semiconductor die to expose the field of conductive bond pads on at least one field of bond pads for attaching conductors thereto.

20. (Previously Amended) The stacked multiple-semiconductor die device according to claim 1, in which said substrate comprises one of a circuit board, circuit card, lead frame and tape automated bonding (TAB) tape.

22. (Previously Amended) A high density stacked multiple-die device, comprising:
a substrate having a surface;
conductive bond areas on the surface of the substrate;
a plurality of semiconductor dice having substantially the same dimensions, each semiconductor die having a rectangular active surface having at least four edges, and a backside;
a field of conductive bond pads disposed on the active surface of each semiconductor die, the field positioned along less than three edges thereof, the backside of a first semiconductor die being attached to the surface of the substrate adjacent the conductive bond areas of said surface of said substrate, the backside of a second semiconductor die being attached to the active surface of the first semiconductor die in an offset position having the field of conductive bond pads of the first semiconductor die exposed;

conductors connecting bond pads of the first semiconductor die to conductive bond areas of the substrate; and
conductors connecting bond pads of the second semiconductor die to one of the conductive bond areas of the substrate and the field of conductive bond pads of the first semiconductor die.

23. (Previously Amended) The high density stacked multiple-die device of claim 22, wherein said plurality of semiconductor dice comprise a stack of semiconductor die, each semiconductor die being one of substantially a same size and of a different size.

25. (Previously Amended) The high density stacked multiple-die stacked device of claim 22, wherein said first semiconductor die is attached to said substrate by a thin adhesive layer and said second semiconductor die is attached to said first semiconductor die by a thin adhesive layer.

26. The high density stacked multiple-die device of claim 22, wherein each semiconductor die has a field of bond pads along one edge thereof, and the second semiconductor die is offset from the first semiconductor die in one direction to expose the bond pads of the first semiconductor die for establishing connections from the bond pads to the substrate.

B² 35. (Amended) The high density stacked multiple-die device of claim 26, wherein each semiconductor die has a field of bond pads along two adjacent edges thereof, and each of the second and subsequent semiconductor die is offset from its underlying semiconductor die in two directions exposing the bond pads thereof for conductive bonding and;
each semiconductor die is offset in the same two directions relative to its underlying semiconductor die.

38. (Previously Amended) The high density stacked multiple-die device of claim 26, wherein each semiconductor die has a length greater than a width whereby rotation of one

semiconductor die relative to an underlying adjacent semiconductor die offsets said first semiconductor die to expose the field of bond pads on at least one of said field of bond pads for attaching said conductors thereto.

40. (Previously Amended) The high density stacked multiple-die device according to claim 22, in which said substrate comprises one of a circuit board, circuit card, lead frame and tape automated bonding (TAB) tape.

45. (Previously Amended) A stacked multiple-semiconductor die device, comprising:
a substrate having a surface;
at least one conductive bond area on the surface of the substrate;
a plurality of semiconductor dice, each semiconductor die having one of similar dimensions and different dimensions, each semiconductor die having an active surface including at least four edges, and a backside;
a field of conductive bond pads disposed on the active surface of each semiconductor die, the field of conductive bond pads positioned along less than three edges of the active surface of at least one semiconductor die, the backside of a first semiconductor die being attached to the surface of the substrate adjacent the at least one conductive bond areas of said surface of said substrate and the backside of a second semiconductor die is attached to the active surface of the first semiconductor die in an offset position having the field of conductive bond pads of the first semiconductor die exposed;
conductors connecting bond pads of the first semiconductor die to conductive bond areas of the substrate; and
conductors connecting bond pads of the second semiconductor die to one of the conductive bond areas of the substrate and conductive bond pads of the first semiconductor die.

46. The stacked multiple-semiconductor die device of claim 45, wherein said plurality of semiconductor dice comprise a stack of semiconductor dice having one of substantially different dimensions.

48. The stacked multiple-semiconductor die device of claim 45, wherein each semiconductor die has a field of bond pads along one edge thereof, and the second semiconductor die being offset from the first semiconductor die in one direction to expose the bond pads of the first semiconductor die for establishing connections from the bond pads to the substrate.

63. (Previously Amended) A high density stacked multiple-die device, comprising:
a substrate having a surface;
conductive bond areas on the surface of the substrate;
a plurality of semiconductor dice having substantially different dimensions, each semiconductor die having a rectangular active surface having at least four edges, and a backside;
a field of conductive bond pads disposed on the active surface of each semiconductor die, the field of conductive bond pads positioned along less than three edges thereof, the backside of a first semiconductor die being attached to the surface of the substrate adjacent the conductive bond areas of said surface of the substrate, the backside of a second semiconductor die being attached to the active surface of the first semiconductor die in an offset position having the field of conductive bond pads of the first semiconductor die exposed;
conductors connecting bond pads of the first semiconductor die to conductive bond areas of the substrate; and
conductors connecting bond pads of the second semiconductor die to one of conductive bond areas of the substrate and conductive bond pads of the first semiconductor die.

64. (Previously Amended) The high density stacked multiple-die device of claim 63, wherein said plurality of semiconductor dice comprise a stack of semiconductor die, each semiconductor die being one of substantially the same size and of the different size.

65. (Previously Amended) The high density stacked multiple-die device of claim 63, comprising at least one additional semiconductor die having the backside attached to the active surface of the next lower semiconductor die in an offset position, the field of conductive bond pads of each semiconductor die exposed for attachment of said conductors thereto.

66. The high density stacked multiple-die device of claim 63, wherein each semiconductor die has a field of bond pads along one edge thereof, and the second semiconductor die is offset from the first semiconductor die in one direction to expose the bond pads of the first semiconductor die for establishing connections from the bond pads to the substrate.

80. (Previously Amended) The high density stacked multiple-die device according to claim 63, in which said substrate comprises one of a circuit board, circuit card, lead frame and tape automated bonding (TAB) tape.